Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Navy

APPROPRIATION/BUDGET ACTIVITY R-1 ITEM NOMENCLATURE

1319: Research, Development, Test & Evaluation, Navy PE 0303138N: Consoldiated Afloat Network Ent Services(CANES)

BA 7: Operational Systems Development

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.000	45.324	63.563	0.000	63.563	10.270	12.659	14.022	14.255	Continuing	Continuing
9C87: CANES Integration	0.000	45.324	63.563	0.000	63.563	10.270	12.659	14.022	14.255	Continuing	Continuing

Note

FY-11 Military Intelligence Program related funding transitions to PE 0303238N.

A. Mission Description and Budget Item Justification

CANES will consolidate and reduce the number of Navy afloat networks with state-of-the-art, high-speed networks and infrastructure. CANES will provide a robust, survivable, secure, scalable Afloat Core Services (ACS) enabled Common Computing Environment (CCE) for ships, submarines, and selected shore sites in addition to providing some proportional capability for aircraft. CANES will provide this ACS enabled CCE capability across all security domains from unclassified through Sensitive Compartmented Information (SCI). CANES is the physical single Program of Record (POR) replacement for the existing afloat networks PORs, Integrated Shipboard Network Systems (ISNS), Combined Enterprise Regional Information Exchange Systems Maritime (CENTRIXS-M), SCI Networks and Submarine LAN (SubLAN). In addition, CANES will provide functionality currently provided in the Video Information Exchange System (VIXS) and portions of Computer Network Defense (CND). CANES will field on a four year hardware baseline and a two year rolling software baseline providing application. The CANES vision is based on the overarching concept of reducing the number of afloat networks and providing enhanced efficiency through a single engineering focus on integrated technical solutions. This will allow for streamlined acquisition, contracting, and test events, and significant lifecycle efficiencies through consolidation of multiple current configuration management baselines, logistics and training efforts into a unified support structure. The primary goals of the CANES program are to: 1) reduce the number of networks through the use of mature, certified, cross domain technologies; 2) reduce the infrastructure footprint and associated costs for hardware afloat; and 3) provide increased capability to meet current and projected warfighter requirements.

CANES will enable application developers to begin decoupling applications and services software away from independent, unique hardware stacks and host them on a common interoperable environment. This approach will incrementally deploy and will provide a basis for overall Navy Return on Investment (ROI) over the existing strategies.

With the evolution of afloat network programs migrating into the CANES program, funding increases will provide even more comprehensive technology capabilities across the fleet. While the networks capabilities of the ISNS, CENTRIXS-M, SubLAN, Automated Digital Network System, and their associated personal computer hardware and software continue to be supported, CANES will reduce the infrastructure footprint and collapse a significant amount of Afloat Networks through the use of mature cross domain technologies. FY11 will focus on CANES System Design and Development (SDD), close out of the SDD phase for transition to Low-

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Navy

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

1319: Research, Development, Test & Evaluation, Navy

BA 7: Operational Systems Development

PE 0303138N: Consoldiated Afloat Network Ent Services(CANES)

Rate Initial Production (LRIP) phase and LRIP contract development. Initiate acquisition and Capabilities Production Document (CPD) for Milestone (MS) C. Procure two Engineering Development Models (EDM) units in FY11. The EDM units function as pre-production units for Environmental Qualification Test and operational assessment, which require funding for necessary installation design and installation costs.

FY09 funded in PE 0604231N, project 2307 and PE 0305208N, project 2174.

B. Program Change Summary (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	0.000	45.513	0.000	0.000	0.000
Current President's Budget	0.000	45.324	63.563	0.000	63.563
Total Adjustments	0.000	-0.189	63.563	0.000	63.563
 Congressional General Reductions 		-0.189			
 Congressional Directed Reductions 		0.000			
 Congressional Rescissions 	0.000	0.000			
 Congressional Adds 		0.000			
 Congressional Directed Transfers 		0.000			
 Reprogrammings 	0.000	0.000			
 SBIR/STTR Transfer 	0.000	0.000			
 Program Adjustments 	0.000	0.000	63.563	0.000	63.563

Change Summary Explanation

Technical: CANES Increment and Configuration Build (C(B)2) language have been removed and acquisition strategy has been modified to identify new versions as Technical Insertion (TI-1, TI-2, etc.).

Schedule: Program initiation occurs at MS B, following pre-acquisition risk reduction efforts to refine the technological approach. CANES System Design and Development (SDD) contract award shifted one quarter to Q2FY10. Due to the delay of the contract award the schedule has moved to the right, following activities also were shifted to the right: Preliminary Design Review (PDR), Critical Design Review (CDR), Developmental Testing (DT), delivery of Engineering Development Model (EDM).

FY11 from previous President's Budget is shown as zero because no FY11-15 data was presented in President's Budget 2010.

UNCLASSIFIED

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 7: Operational Systems Development				R-1 ITEM N PE 0303138 Ent Service	BN: Consold	 Network	PROJECT 9C87: CAN	IES Integrati	on	
	FY 2011	FY 2011								

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
9C87: CANES Integration	0.000	45.324	63.563	0.000	63.563	10.270	12.659	14.022	14.255	Continuing	Continuing
Quantity of RDT&E Articles	0	2	2	0	2	0	0	0	0		

Note

FY-11 Military Intelligence Program related funding transitions to PE 0303238N.

A. Mission Description and Budget Item Justification

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy

CANES will consolidate and reduce the number of Navy afloat networks with state-of-the-art, high-speed networks and infrastructure. CANES will provide a robust, survivable, secure, scalable Afloat Core Services (ACS) enabled Common Computing Environment (CCE) for ships, submarines, and selected shore sites in addition to providing some proportional capability for aircraft. CANES will provide this ACS enabled CCE capability across all security domains from unclassified through Sensitive Compartmented Information (SCI). CANES is the physical single Program of Record (POR) replacement for the existing afloat networks PORs, Integrated Shipboard Network Systems (ISNS), Combined Enterprise Regional Information Exchange Systems Maritime (CENTRIXS-M), SCI Networks and Submarine LAN (SubLAN). In addition, CANES will provide functionality currently provided in the Video Information Exchange System (VIXS) and portions of Computer Network Defense (CND). CANES will field on a four year hardware baseline and a two year rolling software baseline providing application. The CANES vision is based on the overarching concept of reducing the number of afloat networks and providing enhanced efficiency through a single engineering focus on integrated technical solutions. This will allow for streamlined acquisition, contracting, and test events, and significant lifecycle efficiencies through consolidation of multiple current configuration management baselines, logistics and training efforts into a unified support structure. The primary goals of the CANES program are to: 1) reduce the number of networks through the use of mature, certified, cross domain technologies; 2) reduce the infrastructure footprint and associated costs for hardware afloat; and 3) provide increased capability to meet current and projected warfighter requirements.

CANES will enable application developers to begin decoupling applications and services software away from independent, unique hardware stacks and host them on a common interoperable environment. This approach will incrementally deploy and will provide a basis for overall Navy Return on Investment (ROI) over the existing strategies.

FY09 funded in PE 0604231N, project 2307 and PE 0305208N, project 2174.

B. Accomplishments/Planned Program (\$ in Millions)

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy **DATE:** February 2010 APPROPRIATION/BUDGET ACTIVITY **R-1 ITEM NOMENCLATURE PROJECT**

1319: Research, Development, Test & Evaluation, Navy

BA 7: Operational Systems Development

PE 0303138N: Consoldiated Afloat Network

Ent Services(CANES)

9C87: CANES Integration

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
CANES Integration	0.000	45.324	63.563	0.000	63.56
FY09 funded in PE 0604231N, project 2307 and PE 0305208N, project 2174.					
Program/budget transition from ISNS Inc 2/CANES to CANES which consolidates afloat networks and enterprise services aboard ships and shore sites. These capabilities include increased availability to mission critical level ships, multiple security enclaves, application hosting, Afloat Core Services (ACS), and collaboration services. Begin required statutory and regulatory programmatic activities required to achieve Milestone B (MS B) and Milestone C (MS C) including acquisition documentation and System Design and Development (SDD) efforts. Conduct Developmental Testing (DT) on CANES. Conduct Preliminary Design Review (PDR) and Critical Design Review (CDR) on CANES. Review and initial operational assessments will be conducted on a minimum of two system developer baselines. CANES ACS version 1.1 will be delivered to the two system developers for integration activities against the proposed development baselines. Develop Cost Analysis Requirements Document (CARD) and Life Cycle Cost Estimate (LCCE) for CANES. Award system development contract on a minimum of two system developer baselines. Procure two Engineering Development Models (EDM) units, which function as non-robust prototypes to be used as lab assets. Prepare Capabilities Production Document (CPD). Achieve MS B. Develop design installation studies and participate in source selection activities.					
FY 2011 Base Plans: Continue CANES statutory and regulatory Acquisition documentation to achieve CANES MS C. Complete revised CARD & LCCE. Procure two Engineering Development Models (EDM) units for Environmental Qualification Test (EQT), operational assessment, integration and regression testing. The EDM units function as pre-production units for EQT and operational assessment, which require additional funding for necessary installation design and installation costs. Continue DT and begin Operational Testing (OT). Close out system development contract and complete down-select of the prime system developer to continue into Low-Rate Initial Production (LRIP).					

UNCLASSIFIED

R-1 Line Item #195 Page 4 of 11

DATE: February 2010 Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE **PROJECT**

1319: Research, Development, Test & Evaluation, Navy PE 0303138N: Consoldiated Afloat Network 9C87: CANES Integration

BA 7: Operational Systems Development Ent Services(CANES)

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Accomplishments/Planned Programs Subtotals		45.324	63.563	0.000	63.563

C. Other Program Funding Summary (\$ in Millions)

			FY 2011	FY 2011	FY 2011					Cost To	
<u>Line Item</u>	FY 2009	FY 2010	Base	<u>000</u>	<u>Total</u>	FY 2012	FY 2013	FY 2014	FY 2015	Complete	Total Cost
• OPN/2915: CANES	0.000	1.177	34.398	0.000	34.398	190.528	283.786	323.824	331.648	Continuing	Continuing
OPN/2925: CANES Intell	0.000	0.000	10.432	0.000	10.432	67.542	74.214	67.144	68.317	Continuing	Continuing
• RDTE/0303238N: CANES MI	P 0.000	0.000	8.375	0.000	8.375	7.406	0.000	0.000	0.000	0.000	15.781

D. Acquisition Strategy

System Design & Development, procurement, integration, and installation efforts for CANES and Afloat Core Services (ACS) are accomplished through various SPAWAR Systems Centers (SSC) and Program Executive Office (PEO) C4I contracts.

E. Performance Metrics

Early RDT&E investment and sustainment of dual design contractors through the development phase will save 10-30% of Total Ownership Cost (TOC) over the life cycle of the program. Cost avoidance throughout the life of the program is based on performance gains that are measured (not quantified) by 1) reducing the number of networks through the use of mature, certified, cross domain technologies; 2) reducing the infrastructure footprint and associated costs for hardware afloat; and 3) providing increased capability to meet current and projected warfighter requirements.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

1319: Research, Development, Test & Evaluation, Navy

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0303138N: Consoldiated Afloat Network

Ent Services(CANES)

PROJECT

9C87: CANES Integration

Product Development (\$ in Millions)

				FY 2	2010	FY 2 Ba	2011 ise	FY 2		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPFF	Vendor A TBD TBD	0.000	14.800	Feb 2010	13.000	Nov 2010	0.000		13.000	Continuing	Continuing	Continuing
Primary Hardware Development	C/CPFF	Vendor B TBD TBD	0.000	14.800	Feb 2010	13.000	Nov 2010	0.000		13.000	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	Vendor A TBD TBD	0.000	1.250	Feb 2010	1.500	Nov 2010	0.000		1.500	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	Vendor B TBD TBD	0.000	1.250	Feb 2010	1.500	Nov 2010	0.000		1.500	Continuing	Continuing	Continuing
Systems Engineering	WR	SPAWAR Systems Center San Diego, CA and Charleston, SC	0.000	6.713	Feb 2010	4.400	Dec 2010	0.000		4.400	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	Vendor C TBD TBD	0.000	0.000		17.600	Feb 2011	0.000		17.600	Continuing	Continuing	Continuing
		Subtotal	0.000	38.813		51.000		0.000		51.000			

Remarks

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

1319: Research, Development, Test & Evaluation, Navy

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0303138N: Consoldiated Afloat Network

Ent Services(CANES)

PROJECT

9C87: CANES Integration

Test and Evaluation (\$ in Millions)

				FY 2	2010	FY 2 Ba	2011 se	FY 2	2011 CO	FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test & Evaluation	C/CPFF	Vendor A TBD TBD	0.000	0.500	Feb 2010	1.000	Nov 2010	0.000		1.000	Continuing	Continuing	Continuing
Development Test & Evaluation	C/CPFF	Vendor B TBD TBD	0.000	0.500	Feb 2010	1.000	Nov 2010	0.000		1.000	Continuing	Continuing	Continuing
Operational Test & Evaluation	WR	COMOPTEVFOR Norfolk, VA and Washington, DC	0.000	0.200	Jan 2010	0.200	Dec 2010	0.000		0.200	Continuing	Continuing	Continuing
Operational Test & Evaluation	C/CPFF	Vendor C TBD TBD	0.000	0.000		8.263	Feb 2011	0.000		8.263	Continuing	Continuing	Continuing
		Subtotal	0.000	1.200		10.463		0.000		10.463			

Remarks

Management Services (\$ in Millions)

				FY 2	2010	FY 2 Ba	-	FY 2		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	SPAWAR Systems Center San Diego, CA and Charleston, SC	0.000	1.811	Feb 2010	1.000	Nov 2010	0.000		1.000	Continuing	Continuing	Continuing
		Various	0.000	3.500	Oct 2009	1.100	Oct 2010	0.000		1.100	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

1319: Research, Development, Test & Evaluation, Navy

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0303138N: Consoldiated Afloat Network

Ent Services(CANES)

PROJECT

9C87: CANES Integration

Management Services (\$ in Millions)

				FY 2	010	FY 2 Ba	-	FY 2	2011 CO	FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Various/ Various	Various											
		Subtotal	0.000	5.311		2.100		0.000		2.100			

Remarks

	Total Prior Years Cost	FY 2010		2011 ise	FY 2	2011 CO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	45.324	63.563		0.000		63.563			

Remarks

Exhibit R-4, RDT&E Schedule P	rofile	: PB 2	2011	Nav	'y																D	ATE	: Feb	ruar	y 201	0	
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 7: Operational Systems Development									R-1 ITEM NOMENCLATURE PE 0303138N: Consoldiated Afloat Network Ent Services(CANES)								k	PROJECT 9C87: CANES Integration									
Fiscal Year		2009			2010 (see note 1))	2011				2012			201		13			2014			201		5	
Quarter	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3 4
Acquisition Milestones (see note 4)					CANI Transi	+~ 1	CANES MS B				,	CANES MS C	S			CANES FRP DR											
System Development (see note 4)						CANES	PDR (CDR	nment -	Surface								CAN	ES Svet	em Dev	- VII					CANES	TI-1 Sys Dev
ı				1		CAINES	System	Jevelo	pinient -	Surface								CAN	LO Oysi	em Dev	- Sub					CANLO	TI-T Sys Dev
Software Development ACS (See Note 3)					ACS	v 1.1																					
Test & Evaluation Milestones Development Test						-		D)T																		DT TI-1
Operational Test														DT (LRIP	')					FOT&E							
Production Milestones LRIP													CANE	S LRIP													
FRP								ANES			LRIP				LRIP					l .	· · · · · · · · · · · · · · · · · · ·	CANE	S FRP	i	•	1	
Deliveries (see note 4,5)						A		M Un	it	С		FOT E)M		LKIF				FRP								FRP
Notes: 1/ FY10 efforts funded under PE 0303138N. 2/ EDM Unit included in LRIP quantities to meet T- 3/ ACS v1.1 software development funded by ISN 4/CANES System Design and Development (SDD right, following activities also were shifted to the rig Testing (DT), Operational Testing (OT), Low-Rate	S.) contract jht: Initial	award s	shifted	one qua	arter to 0	Q2FY10. Prelimina	ıry Desig	ın Rev	iew (PD	DR), Crit	tical De																

UNCLASSIFIED

R-1 Line Item #195 Page 9 of 11

5/ACS v1.1 delivery date has been corrected.

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Navy

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

1319: Research, Development, Test & Evaluation, Navy

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0303138N: Consoldiated Afloat Network

Ent Services(CANES)

PROJECT

9C87: CANES Integration

Schedule Details

	Sta	Start				
Event	Quarter	Year	Quarter	Year		
Acquisition Milestone - CANES MS B	3	2010	3	2010		
Acquisition Milestone - CANES Transition	1	2010	1	2010		
Acquisition Milestone - CANES MS C	4	2011	4	2011		
Acquisition Milestone - IOC	1	2012	1	2012		
Acquisition Milestone - FRP Decision Review	4	2012	4	2012		
System Development - Surface	2	2010	2	2011		
System Development - PDR	3	2010	3	2010		
System Development - CDR	4	2010	4	2010		
System Development - Subs	2	2013	1	2014		
System Development - Technical Insertion 1	2	2015	4	2015		
Development Test	3	2010	2	2011		
Development Test - Technical Insertion 1	3	2015	4	2015		
OperationalTest - (LRIP)	4	2011	4	2012		
OperationalTest - FOT&E	2	2013	2	2014		
Production Milestone - LRIP	3	2011	4	2012		
Production Milestone - FRP	1	2013	4	2015		
Deliveries - CANES EDM Unit	4	2010	4	2010		
Deliveries - CANES EDM Unit (EQT)	4	2011	4	2011		

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Navy

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

1319: Research, Development, Test & Evaluation, Navy

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0303138N: Consoldiated Afloat Network

Ent Services(CANES)

PROJECT

9C87: CANES Integration

	St	art	E	nd
Event	Quarter	Year	Quarter	Year
Deliveries - LRIP	4	2011	4	2012
Deliveries - FRP	3	2013	4	2015
Deliveries - ACS 1.1	3	2010	3	2010